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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/822,825	04/02/2001	Benoit Barriere	ATOCM-207	8093

23599 7590 09/23/2003

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EXAMINER

CREPEAU, JONATHAN

ART UNIT	PAPER NUMBER
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1746

DATE MAILED: 09/23/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/822,825

Applicant(s)

BARRIERE ET AL.

Examiner

Jonathan S. Crepeau

Art Unit

1746

A2-11

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 July 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## **DETAILED ACTION**

### ***Response to Amendment***

1. This Office action addresses claims 1-15. The submission of the priority document translation is sufficient to remove copending application 09/575,368 as prior art against the claims. However, claims are newly rejected under 35 USC §102 and §103 herein. In addition, new grounds of rejection under the doctrine of obviousness-type double patenting over copending applications 10/088,342 and 10/088,560 are applied herein. Accordingly, this action is non-final.

### ***Terminal Disclaimer***

2. The terminal disclaimer filed on July 10, 2003 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of serial no. 09/575,368 has been reviewed and is accepted. The terminal disclaimer has been recorded.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 13-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Yoerger (U.S. Patent 4,726,994). Regarding claims 13 and 14, the reference discloses carrier particles coated

by a dehydrodrofluorinated and oxidized fluorohydrocarbon polymer (L2) in the abstract.

Regarding claim 14, the polymer may be polyvinylidene difluoride (see col. 6, line 37).

Regarding claim 13, the carrier particles comprise a core layer (L1) made of a metal such as iron, nickel, or cobalt (see col. 6, line 20). Regarding claim 15, the dehydrofluorination is performed in a basic medium, and oxidation is performed with hydrogen peroxide (see col. 5, lines 38-62).

Regarding claim 13, the treatment of the fluoropolymer is inherently sufficient to increase adhesion.

Thus, the instant claims are anticipated.

5. Claims 1-3, 13, and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Inagaki (*Macromolecules*, 1999). Regarding claim 1-3, 13, and 14, the article is directed to a tetrafluoroethylene-perfluoroalkyl vinyl ether copolymer (L3) having a surface (L2) which is subjected to defluorination and oxidation by a plasma treatment (see abstract). Regarding claims 1 and 13, the modified surface (L2) functions to increase adhesion of the copolymer (L3) to a copper layer (L1).

Thus, the instant claims are anticipated.

#### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 97/27260 in view of Takahashi et al (U.S. Patent 5,415,958) as evidenced by Mizuide et al (U.S. Patent 6,329,471).

Regarding claims 11 and 12, WO '260 discloses a lithium battery comprising a positive electrode and negative electrode (see page 6, lines 1-5). Regarding claims 6 and 7, the positive electrode comprises mixed oxide particles (see page 6, line 32). Regarding claims 6 and 9, the negative electrode comprises carbon particles (see page 6, line 9). Regarding claim 8, the current collector of the positive electrode is aluminum (see page 10, line 34). Regarding claim 10, the current collector of the negative electrode is copper (see page 10, line 26). Regarding claims 6 and 13, each electrode comprises a structure having a collector (L1) and a fluorinated adhesive composition (L2) comprising the active material (see page 7, lines 6-27). However, regarding claims 1 and 6, the invention of WO '260 is more broadly directed to structures comprising a metal (L1), a fluorinated adhesive composition (L2), and a fluorinated resin (L3), in that order (see page 4, lines 18-20).

WO '260 does not expressly teach that the layer L2 comprises a layer of fluoro primer which is derived from a fluoropolymer (e.g., VDF-HFP) chemically modified by a partial dehydrofluorination followed by oxidation as recited in claims 1-5, 13, and 14.

Takahashi et al. is directed to carboxyl group-containing vinylidene fluoride copolymer binder composition for a lithium secondary battery (see abstract). The copolymer may contain vinylidene fluoride and hexafluoropropylene (see col. 3, lines 40-57).

Therefore, the invention as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made because the artisan would be motivated to use the carboxyl group-containing vinylidene fluoride copolymer binder composition of Takahashi et al. as the layer L2 of WO '260. In column 7, line 64, Takahashi et al. teach that "[b]ecause of the excellent adhesion to a substrate of metals, plastics, glass, ceramics, wood, etc., and chemical resistance, the vinylidene fluoride copolymer according to the present invention can be extremely suitably used for various paints, lining materials and binders. It is particularly useful to use the copolymer as a binder for cell electrode production." Thus, the artisan would be motivated to use the carboxyl group-containing vinylidene fluoride copolymer binder composition of Takahashi et al. as the layer L2 of WO '260. The hexafluoropropylene monomer comprises a perfluoroalkyl ( $\text{CF}_3$ ) group, as recited in claim 4.

Although Takahashi et al. do not teach that the binder composition is formed by partial dehydrofluorination followed by oxidation, the structure of the polymer of Takahashi et al. appears to be identical to that of a polymer made by the claimed process. See U.S. Patent 6,329,471 to Mizuide et al., which discloses a carboxyl-group containing fluorine-based copolymer made by the claimed process. Accordingly, as the polymer of Takahashi et al. and claimed polymer appear to be identical, the burden is shifted to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art

product. *In re Marosi*, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir. 1983). See also MPEP §2113.

Further, although WO '260 does not expressly teach the feature in claim 6 that the layer L3 of fluoropolymer contains the active material, this feature would be obvious to one of ordinary skill in the art. As noted above, the reference specifically teaches layers L1 and L2 in an electrode (L2 containing the active material), but more broadly teaches a structure comprising layers L1, L2, and L3 (L3 being a conventional fluoropolymer). The artisan would be motivated to use an electrode structure comprising three layers instead of two because the unmodified fluoropolymer in layer L3 is more resistant to chemical attack than the modified polymer (see col. 6, line 14 of WO '260; col. 7, lines 58-63 of Takahashi). Accordingly, the WO '260 reference fairly suggests the three-layer electrode structure recited in claim 6.

### ***Double Patenting***

8. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

9. Claims 1-5, 13, and 14 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-15 of copending Application No. 10/088,560 (U.S. Pre-Grant Publication No. 2003/0087100). Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims of the '560 application anticipate the instant claims. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993).

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

10. Claims 13 and 14 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-9 of copending Application No. 10/088,342 (U.S. Pre-Grant Publication No. 2003/0170538). Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims of the '342 application anticipate the instant claims. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993).

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.



*Conclusion*

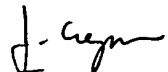
11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan Crepeau whose telephone number is (703) 305-0051. The examiner can normally be reached Monday-Friday from 9:30 AM - 6:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski, can be reached at (703) 308-4333. The phone number for the organization where this application or proceeding is assigned is (703) 305-5900. Additionally, documents may be faxed to (703) 872-9310 (for non-final communications) or (703) 872-9311 (for after-final communications).

Any inquiry of general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

JSC

September 12, 2003

  
JONATHAN CREPEAU  
PATENT EXAMINER  
ART UNIT 1746